REMARKS/ARGUMENTS

The present application has been reviewed in light of the Office Action dated September 29, 2009. Claims 1-11 and 70-72 are pending in this application. Claims 1, 6, and 8 have been amended and claims 12-69 have been previously withdrawn. Claim 1 is in independent form. Applicants respectfully request reconsideration of these rejections and reexamination of the above-identified application in view of the amendments made to the claims and the remarks below.

Applicants respectfully reserve the right to file at least one divisional application to non-elected claims 12-69.

Claims 1-11 and 70-72 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. Applicants have amended portions of the claims to comply with the Examiner's request and to clarify the claims. Accordingly, Applicants respectfully request that the 112, first paragraph rejection be withdrawn.

Claims 1-11 and 70-72 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter applicants regard as the invention. Applicants have amended portions of the claims to comply with the Examiner's request and to clarify the claims. Accordingly, Applicants respectfully request that the 112, second paragraph rejection be withdrawn.

The Examiner also commented that dependent claims 6 and 8 were unclear. Applicants have amended claims 6 and 8 to clarify any alleged unclear language recited therein.

Claims 1-3 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,972,199 to Lebouitz (hereinafter "Lebouitz"). Applicants respectfully submit that claim 1, as amended herein, is allowable over Lebouitz.

MPEP §2131 states that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (*Citing Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)).

Applicants submit that Lebouitz does not anticipate each and every element of amended independent claim 1. Independent claim 1 presently recites, in pertinent part, a plurality of discrete micro-electromechanical system (MEMS) devices disposed and spaced apart along a length of the surgical instrument for at least one of sensing a condition, measuring a parameter and controlling the condition and/or parameter adjacent the end effector; wherein each MEMS device is a single integral device that is operationally independent of other MEMS devices configured to communicate with the surgical instrument, the MEMS devices including two or three orthogonal assemblies of MEMS devices integrated together to form a two or three dimensional acceleration measuring device.

As seen in at least FIGS. 1-4 of the present disclosure (only FIGS. 3, 3A being reproduced below by way of example), the surgical stapling instrument includes several discrete MEMS "M" that are disposed and spaced apart along a length of the surgical instrument. Each MEMS device is a single integral device that is operationally independent of other MEMS devices configured to communicate with the surgical instrument, the MEMS devices including

two or three orthogonal assemblies of MEMS devices integrated together to form a two or three dimensional acceleration measuring device. (see page 22, lines 8-11).

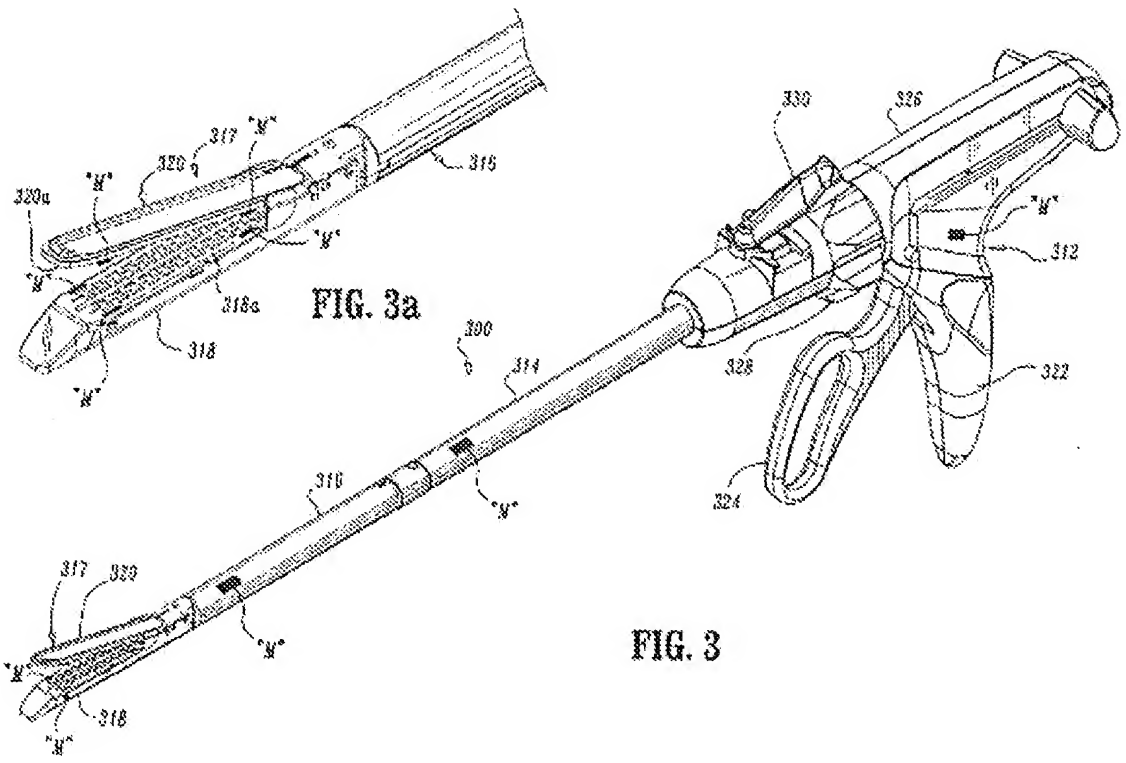

FIG. 3a

FIG. 3

Lebouitz does not disclose "...a plurality of discrete micro-electromechanical system (MEMS) devices disposed and spaced apart along a length of the surgical instrument for at least one of sensing a condition, measuring a parameter and controlling the condition and/or parameter adjacent the end effector; wherein each MEMS device is a single integral device that is operationally independent of other MEMS devices configured to communicate with the surgical instrument, the MEMS devices including two or three orthogonal assemblies of MEMS devices integrated together to form a two or three dimensional acceleration measuring device," as recited in amended independent claim 1.

In particular, Lebouitz is directed to a cutting instrument including a metal blade that has a recess formed therein and a semiconductor substrate affixed to the blade in the recess. The semiconductor substrate includes at least one sensor formed thereon. The sensor formed on the semiconductor substrate may comprise at least one or an array of a strain sensors, pressure sensors, nerve sensors, temperature sensors, density sensors, accelerometers, and gyroscopes. (Abstract)

With regard to FIG. 3 of Lebouitz, reproduced below, sensor element 30 is bonded into recess 20 of blade 10 using any one of a number of adhesives (column 6, lines 46-54). Additionally, sensor element 30 includes semiconductor substrate 35, preferably made of silicon. Formed on semiconductor substrate 35 are sensor 40 and sensor array 45, comprising a plurality of individual sensors. Sensor 40 and the individual sensors forming sensor array 45 can be any one of the well known types of sensors described herein, for example, a strain sensor, a pressure sensor, a temperature sensor, a density sensor, a motion sensor, or any other sensing device that can be formed on semiconductor substrate 35. (Column 5, lines 29-38). Thus, Lebouitz teaches a sensor array located <u>on only one portion</u> (i.e., the distal portion or blade) of the cutting instrument.

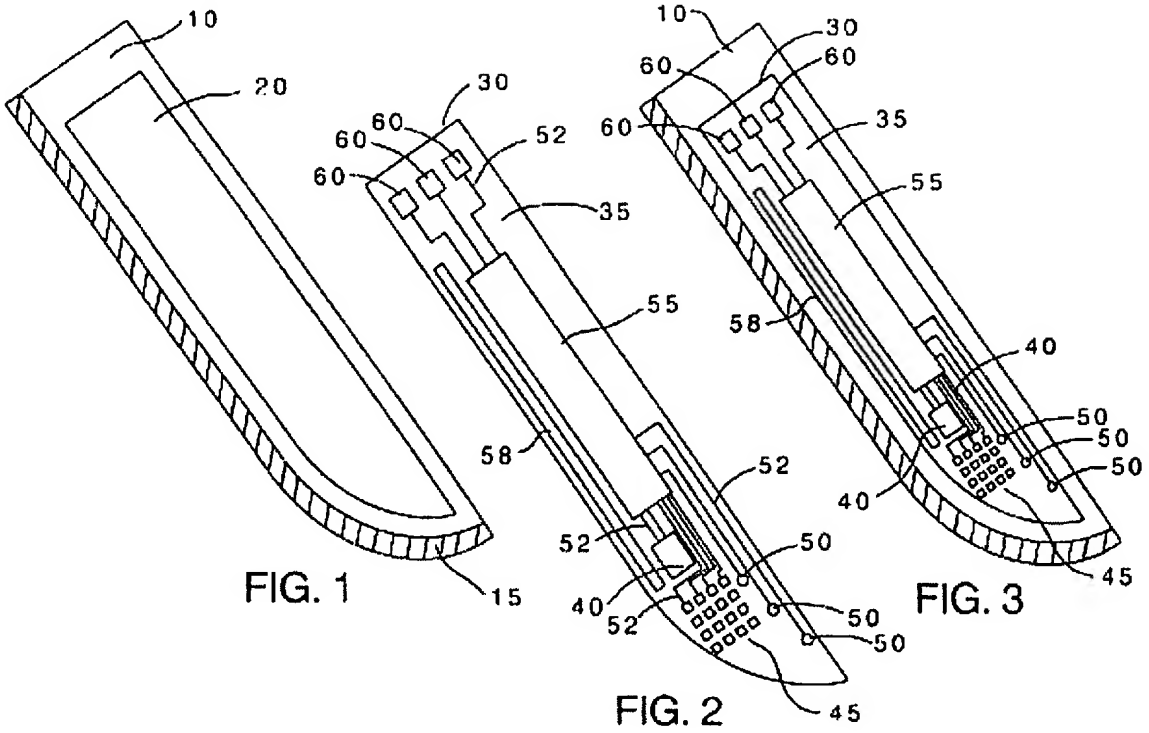

FIG. 1

FIG. 2

FIG. 3

In contrast, in the present disclosure, a plurality of MEMS devices are disposed and spaced apart along a length of the surgical instrument, as clearly illustrated in FIGS. 3, 3A (reproduced above). Additionally, in the present disclosure, the MEMS devices include two or three orthogonal assemblies of MEMS devices integrated together to form a two or three dimensional acceleration measuring device. For example the MEMS devices are positioned (i) on the inner clamping portion of the end effector 317, (ii) on the disposable loading unit 316, (iii) on the elongated body 314, and (iv) on the handle assembly 312. Support for such feature(s) can be found at least from FIG. 3 and page 15, line 29 to page 16, line 2. In other words, multiple MEMS are distributed or positioned, in multiple discrete sections, throughout the surgical instrument and are not confined only to the distal end of a device (e.g., a blade), as in Lebouitz.

Applicants therefore respectfully submit that, in view of the amendments made to claim 1 herein, and in view of the arguments presented above, that claim 1 is allowable over Lebouitz. Since claims 2-3 depend, either directly or indirectly, from claim 1 and contain all of the features of claim 1, for the arguments overcoming the rejection to claim 1 are applicable as well to claims 2-3.

Claims 1-10, 71, and 72 were rejected under 35 U.S.C 103(a) as being unpatentable over Hooven (U.S. Patent No. 5,518,163) in view of Wang et al. (U.S. Application No. 2004/0236352) and Lebouitz. Applicants submit that claim 1, is allowable over the applied combination of Hooven, Wang, and Lebouitz.

Applicant submits that Hooven fails to disclose MEMS sensors that are integrated devices.

Moreover, at page 7 of the present Office Action, the Examiner stated that Hooven does not disclose "the MEMS devices are disposed along an entire length of the surgical instrument including the handle assembly, the elongate member, and the end effector." The Examiner relied on Wang and Lebouitz to cure such deficiencies. However, both Wang and Lebouitz, taken alone or in any proper combination with Hooven, do not teach and/or suggest the subject matter of amended independent claim 1 as a whole.

Specifically, Wang states that each joint Jm1 -Jm5 has a position sensor which provides feedback signals that correspond to the relative position of the handle [0024]. Additionally, when the surgeon moves a handle, the position sensors provide feedback signals M1-M5 that correspond to the movement of the joints Jm1-Jm5, respectively [0027]. In other words, the

sensors are only located on the robotic arm, which is a portion of the entire system, the system being the several multiple instruments and several robotic arms. In contrast, in the present disclosure and as recited in the claims as amended, a plurality of discrete micro-electromechanical system (MEMS) devices disposed and spaced apart along a length of the surgical instrument. Applicant submits that Lebouitz does not teach and/or suggest the added features for at least the reasons presented above. Thus, Wang and Lebouitz do not cure the deficiencies of Hooven.

Applicants therefore respectfully submit that, in view of the amendments made to claim 1 herein, and in view of the arguments presented above, that claim 1 is allowable over Hooven, Wang, and Lebouitz. Since claims 2-10, 71, and 72 depend, either directly or indirectly, from claim 1 and contain all of the features of claim 1, Applicants respectfully submit that the subject matter of claims 2-10, 71, and 72 as a whole is not obvious under 35 U.S.C. §103(a) over Hooven, Wang, and Lebouitz.

In view of the foregoing, for at least the reasons that amended independent claim 1 is allowable over Hooven in view of Wang and Lebouitz under 35 U.S.C. §103(a), *inter alia*, Applicants respectfully submit that claims 1-10, 71, and 72 are also allowable over Hooven, Wang, and Lebouitz under 35 U.S.C. §103(a).

Claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over Hooven, Wang, and Lebouitz, as applied to claim 9 above, and further in view of Racenet et al. (U.S. Application No. 2004/0267310). Applicants submit that claim 1, is allowable over the applied combination of Hooven, Wang, Lebouitz, and Racenet.

Claim 11 depends from claim 1 and contains all of the features thereof. At least for the reasons presented above, it is respectfully submitted that the subject matter of claim 11 as a whole is also patentable over Hooven, Wang, and Lebouitz in view of Racenet.

Additionally, the Examiner relies on Racenet for the disclosure of either a linear or annular surgical stapler. However, even assuming the teachings of Racenet proffered by the Examiner, Applicants submit that Racenet would fail to cure any deficiencies of Hooven, Wang, and Lebouitz as it relates to underlying independent claim 1 because Racenet fails to teach or suggest "...a plurality of discrete micro-electromechanical system (MEMS) devices disposed and spaced apart along a length of the surgical instrument," as recited in amended independent claim 1.

In view of the foregoing, for at least the reasons that amended independent claim 1 is allowable over Hooven, Wang, and Lebouitz in view of Racenet under 35 U.S.C. §103(a), *inter alia*, Applicants respectfully submit that claim 11 is also allowable over Hooven, Wang, and Lebouitz in view of Racenet under 35 U.S.C. §103(a).

Accordingly, it is respectfully submitted that Applicants' amendments and/or remarks overcome the rejections of the Office Action with respect to claims 1-11 and 70-72 and put said claims in condition for allowance. Applicants request reconsideration and reexamination of the application in view of the amendments made to the claims and the remarks above.

In light of these amendments and remarks, favorable consideration and allowance of all outstanding claims are earnestly solicited. Should there be any questions after the Examiner's review of this paper; the Examiner is invited to contact the undersigned at either of the numbers indicated below.

Respectfully submitted,

Francesco Sardone
Reg. No. 47,918
Attorney for Applicants

Carter, DeLuca, Farrell & Schmidt, LLP
445 Broad Hollow Rd., Suite 420
Melville, New York 11747
Phone - (631) 501-5700
Fax - (631) 501-3526

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